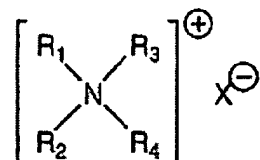


**Listing of Claims:**

Claim 1 (currently amended): A surfactant blend ~~comprising~~ consisting essentially of:

(a) an antimicrobial compound of the formula:



wherein,

R<sub>1</sub> and R<sub>2</sub> are straight or branched chain lower alkyl groups having from one to seven carbon atoms;

R<sub>3</sub> is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms, or a benzyl group optionally substituted with C<sub>1</sub>-C<sub>6</sub> alkyl groups;

R<sub>4</sub> is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms; and

X is an anion forming a water soluble salt, ~~such as~~ consisting essentially of halogen, methosulfate, saccharinate, sulfate, ethosulfate, tosylate, acetate, phosphate, nitrate, sulfonate, or carboxylate;

- (b) an anionic surfactant selected from the group consisting of: alkyl sulfates having from about 8 to about 10 carbon atoms, alkyl ether sulfates, and alkyl sulfonates having from about 8 to about 10 carbon atoms; and
- (c) a bridging surfactant selected from the group consisting of amine oxide and amphoteric surfactant.

Claim 2 (currently amended): An antimicrobial composition comprising water and ~~an amount of~~

the surfactant a blend according to claim 1, wherein said antimicrobial composition is in an amount effective to control the growth of microorganisms in contact with the composition.

Claim 3 (original): An antimicrobial composition comprising water and an amount of a blend according to claim 1, effective to produce a concentration of the anti-microbial compound of from about 1 to about 3000 ppm.

Claim 4 (canceled).

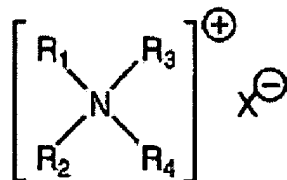
Claim 5 (canceled).

Claim 6 (canceled).

Claim 7 (currently amended): A method for controlling the growth of microorganisms, comprising contacting a surface suspected of containing microorganisms with a surfactant blend according to claim 1.

Claim 8 (currently amended): A surfactant blend comprising:

(a) a quaternary ammonium compound of the formula:



wherein

R<sub>1</sub> and R<sub>2</sub> are straight or branched chain lower alkyl groups having from

one to seven carbon atoms;

R<sub>3</sub> is a straight or branched chain higher alkyl group having from about eight to twenty

carbon atoms, or a benzyl group optionally substituted with C<sub>1</sub>-C<sub>6</sub> alkyl groups;

R<sub>4</sub> is a straight or branched chain higher alkyl group having from about eight to twenty

carbon atoms; and

X is an anion forming a water soluble salt;

(b) an anionic surfactant ~~which is~~ consisting essentially of:

(i) an alkyl sulfate having an average of from about 8 to about 16 carbon atoms;

(ii) an alkyl sulfonate having an average of from about 8 to about 18 carbon atoms;

(iii) an alkyl ether sulfate having an average of from about 8 to about 16 carbon atoms

in the alkyl portion and from about 1 to about 30 moles of ethylene oxide;

(iv) an  $\alpha$  - olefin sulfonate having an average of from about 12 to about 18 carbon atoms;

(v) an  $\alpha$  - sulfonated C<sub>1</sub> - C<sub>6</sub> alkyl ester of a fatty acid having an average of from about 11 to about 16 carbon atoms;

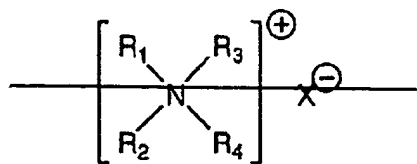
(vi) a sulfosuccinate having an average of from about 10 to about 16 carbon atoms;

(vii) a sarcosinate having an average of from about 10 to about 16 carbon atoms;

(viii) a sulfoacetate having an average of from about 12 to about 20 carbon atoms; or mixtures thereof; and

(c) a bridging surfactant selected from the group consisting of amine oxides, ethoxamides, and betaines;

~~optionally (d) a cationic surfactant which is a quaternary ammonium compound of the formula:~~



\_\_\_\_\_where

\_\_\_\_\_  $R_1$ ,  $R_2$ , and  $R_3$  are independently ethyl or methyl;

$R_4$  is an alkyl group having an average of from about 8 to about 16 carbon atoms; and

$X$  is halogen, sulfate, methosulfate, ethosulfate, tosylate, acetate, phosphate, nitrate, sulfonated, or carboxylate;

wherein the total concentration of combined quaternary ammonium compound, anionic, and bridging surfactants is from about 30 to about 80 percent by weight, and wherein the surfactant blend is flowable.

Claim 9 (canceled).

Claim 10 (currently amended): A surfactant blend according to claim 8, wherein the anionic surfactant is an alkyl sulfate having an average of from about 10 to about 12 carbon atoms.

Claim 11 (currently amended): A surfactant blend according to claim 8, wherein the anionic surfactant is an  $\alpha$  - sulfonated  $C_1 - C_6$  alkyl ester of a fatty acid having an average of from about 11 to about 16 carbon atoms.

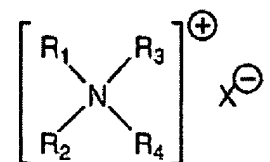
Claim 12 (currently amended): A surfactant blend according to claims 8, wherein the

anionic surfactant is an alkyl sulfonated having an average of about 6 carbon atoms.

Claim 13 (currently amended): A surfactant blend according to claim 8, wherein the anionic surfactant is an alkyl ether sulfate having an average of from about 8 to about 16 carbon atoms in the alkyl portion and from about 1 to about 30 moles of ethylene oxide.

Claims 14 – 22 (canceled).

Claim 23 (new): A surfactant blend according to claim 8, wherein the surfactant blend further comprises a cationic surfactant which is a quaternary ammonium compound of the formula:



wherein,

R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are independently ethyl or methyl groups;

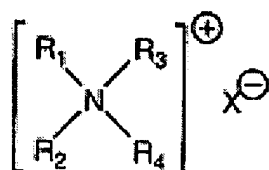
R<sub>4</sub> is an alkyl group having an average of from about 8 to about 16 carbon atoms; and

X is a member selected from the group consisting of halogen, sulfate, methosulfate, ethosulfate, tosylate, acetate, phosphate, nitrate, sulfonate, and carboxylate.

Claim 24 (new): An aqueous liquid phase comprising the surfactant blend of claim 23, wherein the cationic surfactant, anionic surfactant, and bridging surfactant are each present in an amount of from about 5 to about 35 percent by weight.

Claim 25 (new): A method for preparing an antimicrobial composition comprising combining:

(a) a quaternary ammonium compound of the formula:



wherein,

$R_1$  and  $R_2$  are straight or branched chain lower alkyl groups having from

one to seven carbon atoms;

$R_3$  is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms, or a benzyl group optionally substituted with  $C_1$ - $C_6$  alkyl;

$R_4$  is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms; and

X is an anion forming a water soluble salt;

(b) an anionic surfactant which is at least one member selected from the group consisting of:

- (i) an alkyl sulfate having an average of from about 8 to about 16 carbon atoms;
- (ii) an alkyl sulfonate having an average of from about 8 to about 18 carbon atoms;
- (iii) an alkyl ether sulfate having an average of from about 8 to about 16 carbon atoms in the alkyl portion and from about 1 to about 30 moles of ethylene oxide;
- (iv) an  $\alpha$  - olefin sulfonate having an average of from about 12 to about 18 carbon atoms;
- (v) an  $\alpha$  - sulfonated  $C_1$  -  $C_6$  alkyl ester of a fatty acid having an average of from

about 11 to about 16 carbon atoms;

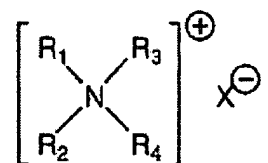
(vi) a sulfosuccinate having an average of from about 10 to about 16 carbon atoms;

(vii) a sarcosinate having an average of from about 10 to about 16 carbon atoms; and

(viii) a sulfoacetate having an average of from about 12 to about 20 carbon atoms;

(c) a bridging surfactant selected from the group consisting of amine oxides, ethoxamides, and betaines; and

optionally (d) a cationic surfactant which is a quaternary ammonium compound of the formula:



wherein,

$R_1$ ,  $R_2$ , and  $R_3$  are independently ethyl or methyl groups;

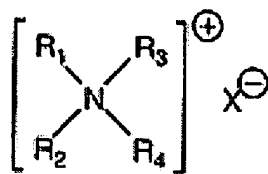
$R_4$  is an alkyl group having an average of from about 8 to about 16 carbon atoms; and

X is a member selected from the group consisting of halogen, sulfate, methosulfate, ethosulfate, tosylate, acetate, phosphate, nitrate, sulfonate, and carboxylate; and

wherein the total concentration of combined quaternary ammonium compound, anionic, and bridging surfactants is from about 30 to about 80 percent by weight, and wherein the surfactant blend is flowable.

Claim 26 (new): An antimicrobial composition consisting essentially of:

(a) A quaternary ammonium compound of the formula:



wherein,

$R_1$  and  $R_2$  are straight or branched chain lower alkyl groups having from one to seven carbon atoms;

$R_3$  is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms, or a benzyl group optionally substituted with  $C_1$ - $C_6$  alkyl groups;

$R_4$  is a straight or branched chain higher alkyl group having from about eight to twenty carbon atoms; and

X is an anion forming a water soluble salt;

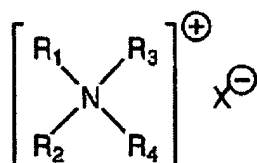
- (b) an anionic surfactant which is a member selected from the group consisting of:
- (i) an alkyl sulfate having an average of from about 8 to about 16 carbon atoms;
  - (ii) an alkyl sulfonate having an average of from about 8 to about 18 carbon atoms;
  - (iii) an alkyl ether sulfate having an average of from about 8 to about 16 carbon atoms in the alkyl portion and from about 1 to about 30 moles of ethylene oxide;
  - (iv) an  $\alpha$  - olefin sulfonate having an average of from about 12 to about 18 carbon atoms;
  - (v) an  $\alpha$  - sulfonated  $C_1$  -  $C_6$  alkyl ester of a fatty acid having an average of from about 11 to about 16 carbon atoms;
  - (vi) a sulfosuccinate having an average of from about 10 to about 16 carbon atoms;
  - (vii) a sarcosinate having an average of from about 10 to about 16 carbon atoms;
  - (viii) a sulfoacetate having an average of from about 12 to about 20 carbon atoms; and



mixtures thereof; and

(c) a bridging surfactant selected from the group consisting of amine oxides, ethoxamides, and betaines; and

optionally (d) a cationic surfactant which is a quaternary ammonium compound of the formula:



wherein,

R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> are independently ethyl or methyl groups;

R<sub>4</sub> is an alkyl group having an average of from about 8 to about 16 carbon atoms; and

X is a member selected from the group consisting of halogen, sulfate, methosulfate, ethosulfate, tosylate, acetate, phosphate, nitrate, sulfonate, and carboxylate; and

wherein the total concentration of combined quaternary ammonium compound, anionic, and bridging surfactants is from about 0.1 to about 30 percent by weight, and wherein the surfactant blend is flowable.

Claim 27 (new): A composition according to claim 25, wherein the anionic surfactant is an alkyl sulfate having an average of from about 10 to about 12 carbon atoms.

Claim 28 (new): A composition according to claim 25, wherein the anionic surfactant is an  $\alpha$  – sulfonated C<sub>1</sub> – C<sub>6</sub> alkyl ester of a fatty acid having an average of from about 11 to about 16 carbon atoms.

Claim 29 (new): A composition according to claim 25, wherein the anionic surfactant is an alkyl sulfonate having an average of about 8 carbon atoms.

Claim 30 (new): A composition according to claim 28, wherein the anionic surfactant is an alkyl ether sulfate having an average of from about 8 to about 16 carbon atoms in the alkyl portion and from about 1 to about 30 moles of ethylene oxide.

Claim 31 (new): An aqueous composition comprising water and the composition of claim 25, where the concentration of the quaternary ammonium compound in the composition is from about 1-3000 ppm.

Claim 32 (new): An antimicrobial composition according to claim 25, wherein the amount of blend of claim 1 is effective to produce a concentration of the anti-microbial compound of from about 1 to about 10 ppm.